

Comparison of the effects of deep manual acupuncture and acupressure on regional pressure pain threshold

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CERTIFICATE OF AUTHORSHIP/ORIGINALITY

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of Candidate

李卫红

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Abstract

Background: The two separate studies reported in this thesis represent the third and fifth in an ongoing series that commenced at the College of Traditional Chinese Medicine (TCM), University of Technology Sydney (UTS) in 1999 into the effect of acupuncture on regional pressure pain threshold (PPT). The studies extended manual acupuncture research and were the first to include a study involving acupressure.

Aims: Study I: To compare the effects of unilateral and bilateral needling of the same acupoint on regional PPT. In addition the effects of individual and combined needling of two distinct acupoints on regional PPT were examined. Study II: To compare the effects of manual acupuncture and acupressure on regional PPT.

Methods: The design was used in both studies that were dual blind within subjects experimental design with randomised repeated measures. There were 22 healthy subjects (11 males and 11 females) in study I and 24 healthy females in study II, and all subjects completed the four interventions used in their study. For Study I, the same needle application technique was used in four manual acupuncture interventions: Large Intestine 4 (LI4) unilaterally; LI4 bilaterally; Large Intestine 11 (LI11) unilaterally; and LI4 in conjunction with LI11 both unilaterally. For Study II, unilaterally applied manual acupuncture to LI4; to Spleen 4 (SP4); unilaterally applied acupressure to LI4 and to a nonacupoint (NAP) used in two previous studies at UTS. PPT was measured at ten regional measurement sites across the body before and after each intervention; the change was expressed as mean percentage change in PPT from preintervention to post intervention. Both within and between intervention comparisons were examined; visual analogue scales were used to measure participants' perceptions of pain; needling or acupressure sensations; tension, and anxiety; and changes in acupuncturist's behaviour.

Results: Study I: following all four interventions, statistically significant increases in mean PPT were observed. These occurred at nine sites following LI4 either unilaterally or bilaterally; at six sites for the LI11 intervention; and at five sites following the combined LI11 and LI4 intervention. These increases were significantly greater for the bilateral LI4 intervention than the unilateral LI4 intervention at only two sites. There were no statistically significant differences in the subjective perceptions among the four interventions. Study II: statistically significant increases in PPT were elicited by both acupressure interventions and acupuncture to SP4. There was minimal difference in the effectiveness of these three interventions. Surprisingly, acupuncture to LI4 was significantly less effective and only produced statistically significant elevations in mean PPT at three sites. The data and design were examined extensively to identify a cause for this finding which was at odds with those from study I and also from the four related studies of PPT and acupuncture to LI4 conducted at UTS. No source of bias was identified and again, no statistically significant differences in the subjective perceptions among the four interventions were identified.

Conclusion: Study I: Needling of LI4 both unilaterally and bilaterally produced similar generalised increases in regional PPT. There was some evidence that the bilateral intervention was marginally more effective than the unilateral one. This provides limited support for the assumption from acupuncture theory that bilateral needling of the same point enhances the treatment effect. Needling of LI11 alone and in combination with LI4 however, both produced significantly weaker effects than either of the LI4 interventions. The latter effect was not expected in view of the assumption from acupuncture theory that combined needling of points from the same channel should enhance the treatment effect. Since the effect observed was weaker than that for LI4 alone, this suggests that there is some form of interaction occurring as a result of the combined needling. The finding supports a similar interaction reported for a previous related UTS study involving the points LI4 and Liver 3 (LR3). Study II: While the study findings suggested that acupressure to either LI4 or the NAP produced similarly generalised and strong effects on mean PPT and which were also comparable to

acupuncture to SP4; the anomalous results for acupuncture to LI4 suggests that all the study findings be treated with caution. Since no source of bias could be identified to explain the relative ineffectiveness of the LI4 acupuncture intervention, a likely conclusion is that an atypical sample was involved in the study: an outcome that is always possible when relatively small samples of volunteers (ie 24 subjects) are drawn from the wider population. Replication of study II is strongly recommended.

Contents

Acknowledgements	ii
Abstract	iv
Contents	vii
Tables	ix
Figures	xi
Chapter I: Introduction	1
1.1 Background to the study (study aims)	1
1.2 Format of the thesis	8
Chapter II: Literature review	10
2.1 Acupuncture and pain threshold	10
2.2 Acupressure and pain threshold	16
2.3 Measuring pain threshold	18
2.4 Prescription needling	22
Chapter III: Methods	23
Study I	23
3.1 Subjects	23
3.2 Methods	24
3.2.1 subject allocation	24
3.2.2 intervention procedure	24
3.2.3 location of intervention sites	25
3.2.4 intervention technique	25
3.2.5 regional PPT measurement sites	25
3.2.6 measurement of PPT	28
3.2.7 subject perceptions concerning each intervention period	29
3.3 Statistical analysis	31
3.3.1 PPT analysis	31
3.3.2 subject perceptions concerning each intervention period	31
Study II	
3.4 Subjects	32

3.5 Methods	32
3.5.1 intervention procedure	32
3.5.2 location of intervention sites	33
3.5.3 intervention technique	33
Chapter IV: Results	34
Study I	34
4.1 Aim one: comparison of the effects on PPT of the four interventions, independent of measurement site	34
4.2 Aim two: comparison of the effects on PPT of the four interventions by individual measurement site	35
4.2.1 within intervention comparison	35
4.2.2 between intervention comparison	37
4.3 Aim three: comparison of distribution of regional PPT effects by intervention	40
4.4 Aim four: evaluation of subject perceptions between interventions	42
4.5 Summary of results	45
Study II	48
4.6 Aim one: comparison of effects on PPT of the four interventions, independent of measurement site	48
4.7 Aim two: comparison of effects upon PPT of the four interventions, measured at ten regional sites	48
4.7.1 within intervention comparison	48
4.7.2 between intervention comparison	51
4.8 Aim three: comparison of the distribution of regional PPT effects by intervention	55
4.9 Aim four: comparison of subject perceptions of acupuncture or acupressure experience by interventions	57
4.10 Summary of results	60
Chapter V: Discussion and Conclusion	63
References	72
Appendices	82
Appendix I: Information sheet and consent form for participations	82
Appendix II: Statistical analysis tables	85

Tables

Table 3.1: Basic data for subjects in Study I.	23
Table 3.2: Demographic data collected for subjects in Study I.	23
Table 3.3: Ten regional body sites at which PPT was measured. The body sites, their anatomical locations and relations to neural segmental regions and/or TCM channels are reported.	27
Table 3.4: Basic data for subjects in Study II.	32
Table 3.5: Demographic data collected for subjects in Study II.	32
Table 4.1: Mean percentage change in PPT from preintervention mean, independent of measurement site, following four interventions (Study I).	34
Table 4.2: Mean percentage change in PPT from preintervention mean for the ten regional measurement sites, following interventions of acupuncture at LI 4, LI4 and LI11 in combination, LI11 alone and LI4 bilaterally (Study I).	35
Table 4.3: Significant differences in the effects of the four interventions on post intervention mean percentage change on PPT, by regional measurement site (Study I).	38
Table 4.4: Summary of significant differences among interventions presented in Table 4.3.	38
Table 4.5: Summary of observed distribution of significant changes to regional PPT by intervention, and the distributions predicted by neural segment theory and/or by TCM channel theory (Study I).	41
Table 4.6: Comparison of mean percentage scores for pain, intervention sensation, tension, anxiety and changes in acupuncturist's behaviour, each recorded on 100mm visual analysis scale (VAS) by subjects for the 21 minutes of each intervention. The F statistic from Tukey simultaneous test is included (Study I).	42
Table 4.8: Mean percentage change in PPT from preintervention mean, independent of measurement site, following four interventions (Study II).	48

Table 4.9: Mean percentage change in PPT from preintervention mean, for the ten regional measurement sites, following interventions of acupressure on LI4, acupuncture at LI4, acupressure on NAP, and acupuncture at SP4 (Study II).	49
Table 4.10: Significant differences in effects of the four interventions on post intervention mean percentage change in PPT, by regional measurement site. Adjusted probability values (p) calculated from Tukey simultaneous test are included (Study II).	52
Table 4.11: Summary of statistically significant differences among interventions presented in Table 4.10.	54
Table 4.12: Summary of observed distribution of statistically significant changes to regional PPT by intervention, and the distribution that would be predicted by neural segment theory and/or by TCM channel theory (Study II).	56
Table 4.13: Comparison of mean percentage scores for pain, intervention sensation, tension, anxiety and practitioner's behaviour change, each recorded on 100mm VAS by subjects for the 21 minutes of each intervention. The F statistic from Tukey simultaneous test is included (Study II).	57
Table 4.14 Correlation matrix of Pearson product moment r for VAS scores for pain, intervention sensation, tension, anxiety and practitioner's behaviour change, recorded for the 21 minutes procedure in four interventions (Study II).	60
Table 5.1: Comparison of measurement sites used in the five UTS research studies.	64
Table 5.2: Comparison of the mean percentage increases in PPT in the four visit subgroups of needling LI4 (Study II) and relative mean percentage VAS scores for pain, intervention sensation, anxiety, tension and changes in practitioner's behaviour separately.	67

Figures

Figure 3.1: The 100mm VAS for recording subjects' beliefs in the effectiveness of acupuncture and their willingness to receive acupuncture as a therapy, completed during the first session.	24
Figure 3.2: Anatomical location of ten regional body sites at which PPT were measured.	26
Figure 3.3: Timeline showing experimental procedure.	29
Figure 3.4: The 100mm VAS used to record subject perceptions relating to the 21 minutes intervention period for each experimental session.	30
Figure 4.1: Mean percentage change in PPT from preintervention mean, for the ten regional measurement sites, following acupuncture to LI4 alone, LI4 and LI11 in combination, LI11 and LI4 bilaterally (Study I).	36
Figure 4.2: Comparison of the relative effects on PPT of the four interventions by site (Study I).	39
Figure 4.3: Comparison of the pain experienced, needling sensation, feeling of tension, anxiety and acupuncturist's behaviour change between interventions (Study I).	43
Figure 4.4. Mean percentage change in PPT from preintervention mean, for the ten regional measurement sites, following acupressure on LI4, acupuncture at LI4, acupressure on NAP and acupuncture at SP4 (Study II).	50
Figure 4.5: Comparison of the relative effects on PPT of the four interventions by site (Study II).	53
Figure 4.6: Comparison of the pain experienced, intervention sensation, tension, anxiety and practitioner's behaviour change between interventions (Study II).	58